

United States General Accounting Office

GAO

Report to the Chairman, Committee on
Armed Services, House of
Representatives

November 1990

STRATEGIC MISSILES

Uncertainties Persist
in the Advanced
Cruise Missile Program

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National Security and
International Affairs Division

B-240467

November 16, 1990

The Honorable Les Aspin
Chairman, Committee on Armed Services
House of Representatives

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Dear Mr. Chairman:

In response to your request, we reviewed the Advanced Cruise Missile program. On September 21, 1990, we issued a classified report on our findings. This is an unclassified summary of our classified report.

Our objective was to examine the Advanced Cruise Missile's procurement quantity, acquisition strategy, technical performance, production readiness, and cost. To accomplish our objective, we reviewed documents and interviewed officials at the Advanced Cruise Missile System Program Office, Wright-Patterson Air Force Base, Ohio; the Departments of Defense and the Air Force, Washington, D.C.; the Strategic Air Command, Offutt Air Force Base, Nebraska; General Dynamics, Convair Division, San Diego, California; and McDonnell Douglas Missile Systems Company, St. Louis, Missouri. We performed our review from January 1989 to May 1990 in accordance with generally accepted government auditing standards.

We are sending copies of this summary to the Chairman, Senate Committee on Armed Services; the Chairmen, Subcommittees on Defense, House and Senate Committees on Appropriations; other congressional committees; the Secretaries of Defense and the Air Force; and the Director, Office of Management and Budget.

This summary was prepared under the direction of Nancy R. Kingsbury, Director, Air Force Issues, who may be reached on (202) 275-4268 if you or your staff have any questions concerning this summary. Other major contributors to this summary are Joseph C. Bohan, Assistant Director, National Security and International Affairs Division, Washington, D.C.; Matthew R. Mongin, Evaluator-in-Charge, and Timothy J. DiNapoli, Evaluator, Cincinnati Regional Office.

Sincerely yours,

Frank C. Conahan

Frank C. Conahan
Assistant Comptroller General

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Summary

Purpose

The Advanced Cruise Missile (ACM) program has been delayed for several years because of various cost, schedule, and performance problems. As a result of these problems and the resulting risk that additional production commitments would result in significant additional costs to repair and retrofit missiles, the Congress directed changes in the program in each of the last 4 years. Because of continued concern about the ACM's progress, the Chairman, House Committee on Armed Services, asked GAO to evaluate the program. Specifically, GAO reviewed the ACM's procurement quantity, acquisition strategy, technical performance, production readiness, and cost.

Background

The Air Force is acquiring the ACM to increase the deterrence value of U.S. nuclear forces and, if necessary, to attack high-value military, economic, and leadership targets. The ACM is a subsonic, turbofan-powered missile that measures about 21 feet in length. It is designed to be less detectable and have greater range, accuracy, and operational flexibility than the Air Launched Cruise Missile. The Air Force is also developing a variant of the ACM. The Air Force estimates the cost to develop and acquire 1,461 missiles, including the variant missiles, is about \$7 billion.

In 1982 the Air Force established a highly concurrent program to develop and produce ACMs to meet an early initial operational capability, as directed by the President. General Dynamics, Convair Division, is responsible for developing the ACM. Since 1985 General Dynamics has been awarded 4 production contracts for a total of 360 missiles. Even though the program encountered significant development delays and flight test failures, the Air Force continued production in an attempt to meet the directed initial operational capability milestone.

To improve missile quality, reliability, and contractor performance, the Air Force revised its acquisition plan in 1987 by selecting McDonnell Douglas Missile Systems Company to qualify as a second producer. Under this plan, both General Dynamics and McDonnell Douglas are to produce 50 missiles in fiscal years 1990 and 1991. Beginning in fiscal year 1992, both contractors are to compete annually to produce the remaining 901 missiles. The variant missiles will be produced solely by General Dynamics. The Air Force's fiscal year 1991 budget request includes \$107.4 million for advance procurement funds to begin competitive production in fiscal year 1992.

In December 1990 the Defense Acquisition Board plans to review several aspects of the ACM program, including the Air Force's acquisition

strategy and the ACM's technical performance, producibility, and logistics support. If the Board's review is favorable, the Air Force plans to start competitive production in fiscal year 1992.

Results in Brief

The Air Force is approaching the ACM's full production milestone decision without resolving several important issues. The most important issues to be resolved are the number of ACMS to be acquired and whether plans for competitive procurement are still valid. Further,

- the ACM's reliability is uncertain,
- deliveries of operational missiles by General Dynamics continue to be delayed,
- qualification of McDonnell Douglas as a second source producer has been delayed, and
- the Air Force's \$7 billion program cost estimate is being revised.



Principal Findings

Procurement Quantity

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The plan to procure 1,461 ACMS, established in the early 1980s, may no longer be appropriate. The decision to defer using B-1B bombers as cruise missile carriers through the 1990s leaves only B-52H bombers to carry ACMS in the near term. Accordingly, the Strategic Air Command has reduced its requirements to 1,200 missiles. The Air Force has proposed to reduce ACM procurement further to 1,000 missiles to reflect budgetary constraints. Department of Defense officials are reviewing these changes but favor maintaining ACM procurement at 1,461 to provide additional operational flexibility.

Several force structure issues, including the time frames during which B-52Hs and B-1Bs will be used as cruise missile carriers, the use of older Air Launched Cruise Missiles, and the impact of Strategic Arms Reduction Treaty agreements, remain unanswered. Depending on how these issues are resolved, ACM requirements will fluctuate significantly. GAO estimates that a reduction of 261 missiles, as proposed by the Strategic Air Command, could save about \$734 million in procurement costs.

Acquisition Strategy

If the planned ACM procurement is reduced, the Air Force's current acquisition strategy may not be appropriate. This strategy calls for the

competitive procurement of 901 missiles beginning in fiscal year 1992. According to program office estimates, competition should result in a net savings of about \$150 million. However, reductions in the planned procurement quantity would eliminate any potential savings and, when coupled with an anticipated 2-year delay in variant missile production, might not provide a sufficient number of missiles to maintain a viable competition.

Technical Performance

Flight testing completed through May 1990 indicated that the ACM can meet most of its operational performance requirements, including range and accuracy. Even though 9 of 22 flight tests failed, Air Force officials noted that six of the last seven flight tests have been successful and that several reliability improvement initiatives are underway. The first eight follow-on test and evaluation flights, which are scheduled to be conducted by October 1991, should demonstrate the ACM's progress.

Production Readiness

Even though General Dynamics was originally scheduled to begin deliveries of ACMS in December 1986, the first operational ACM was not delivered until June 1990. General Dynamics continues to experience design and manufacturing problems that delay deliveries month to month. The need to redesign the ACM's fuel pressurization bladder is the most recent problem. General Dynamics has over 70 missiles nearly complete and others in various stages of completion. Timely delivery of these missiles will demonstrate General Dynamics' readiness to produce ACMS at a higher rate.

McDonnell Douglas was scheduled to complete qualification as a second producer in April 1990 and deliver all 14 qualification missiles by August 1990. The Air Force, however, is restructuring the program to accommodate design changes, flight test delays, and other problems. As a result, McDonnell Douglas may not complete all qualification tasks until October 1990 and is not scheduled to deliver the last qualification missile until December 1990.

Cost

The Air Force's program cost estimate of \$7 billion does not reflect potential changes in procurement quantity or acquisition strategy or include the cost of completing several important tasks. For example, the estimate excludes \$264 million needed to complete development of the

variant missile and establish an ACM depot support capability. The program office and an independent Air Force cost analysis team are preparing updated estimates for the Defense Acquisition Board.

Recommendations

GAO recommends that the Secretary of Defense determine the number of ACMS needed to support the bomber force in the 1990s, giving consideration to budgetary constraints and Strategic Arms Reduction Treaty agreements.

Once this number is established, GAO also recommends that the Secretary of Defense direct the Secretary of the Air Force to

- review the ACM's competitive procurement acquisition strategy and determine whether it is still valid,
- conduct the eight follow-on test and evaluation flight tests planned for fiscal year 1991 and certify that the ACM can meet its full production reliability criteria before production funds beyond fiscal year 1991 are obligated, and
- ensure the revised cost estimate reflects recent program changes.

Matter for Congressional Consideration

The Air Force has requested advance procurement funds of \$107.4 million in fiscal year 1991 to initiate competitive procurement in fiscal year 1992. However, until the number of ACMS required is determined and an acquisition strategy validated, the need for advance procurement funds cannot be determined. Therefore, the Congress may wish to direct that the use of these funds be minimized until the acquisition strategy is validated.

Agency Comments

GAO did not obtain written agency comments on the classified report or this summary. However, GAO discussed a draft of the report and summary with officials from the Department of Defense, the Air Force, General Dynamics, and McDonnell Douglas and incorporated their comments where appropriate.